

**DESIGN AND IMPLEMENTATION ON PROTOTYPE OF
WEB BASED HOME MONITORING AND LAMPS
CONTROLLING BASED ON ARDUINO SYSTEM**



FINAL PROJECT

**Arranged as one of requirement to finish the educational (S1) at Department
of Electrical Engineering Faculty of Engineering
Universitas Muhammadiyah Surakarta**

Submitted by:

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2015

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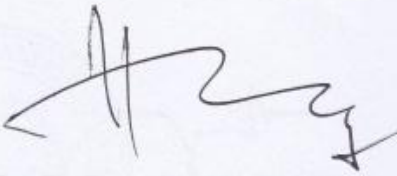
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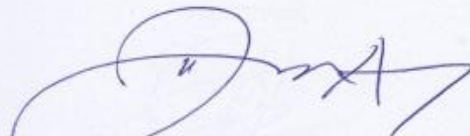
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AFFIRMATION PAGE

This final project has been maintained and be accounted in front of the council of final project examiner to complete tasks and fulfil the requirements for achieve a bachelor of Engineering Department of Electrical Engineering Universitas Muhammadiyah Surakarta.

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THE TITLE IS

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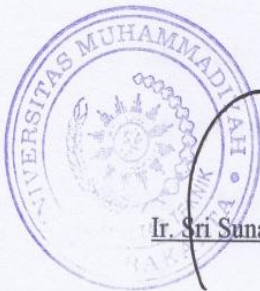
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PREFACE

Assalamu'alaikumWr.Wb.

Alhamdulillahirabbil'alam, praise is merely to the Almighty Allah SWT for the gracious mercy and tremendous blessing that enables me to accomplish this bachelor final project entitled: smart home for monitoring and controlling lamps switches based on arduino system.

. This bachelor final project is presented to fulfill one of the requirements in accomplishing S-1 Degree in Departement of Electrical Engineering, Engineering Faculty, UniversitasMuhammadiyah Surakarta.

I would like to express my special appreciation for the people who are involved in the creation of this report either directly or indirectly, including to:

1. Allah SWT for His abundance of grace.
2. Mr. Prof. Bambang Setiaji, as the Rector of the Universitas Muhammadiyah Surakarta.
3. Mr. Ir. Sri Sunarjono, MT, Ph.D.,as Dean of the Faculty of Engineering, Universitas Muhammadiyah Surakarta.
4. Mr. Umar, ST, MT, as Head of Electrical Engineering Department Universitas Muhamadiyah Surakarta.
5. Mr. Dr. Ir. Bana Handaga, MT, as the first mentor in this final project.
6. Mr. Dedy Ary Prasetya ST, as the second mentor in this final project.
7. Mr or Mrs Lecturer as the council of examiners in this final project.
8. Mr or Mrs Lecturers who has guided and gives knowledge all this time to us.

9. My parents and my sisters (Nita, Isma and qiqi) who gave us a lot of supports in material and immaterial.
10. Friends in PESMA UMS who have given me sadness (Isvan, Iqbal, Nanda, Ghilang, Nugraho, Agung And the other parties who can't we mentioned one by one)
11. My class mate who always accompany me as long as four years in class (Jovita, Dhucha, Wawan and Tyo).
12. All the staff of Administration, Academic and non-academic staff, who have helped and provide convenience to the author during studying at Department of Electrical Engineering, Faculty of Engineering, Universitas Muhammadiyah Surakarta.
13. Friends in KMTE Universitas Muhammadiyah Surakarta, friends electro class of 2010, class of 2011 and class of 2012 who have shared in the joy and sorrow.
14. And the other parties who can't we mentioned one by one, for all of the help we say thank you very much.

We realize that in the preparation of this Final Project report have many weaknesses and still far from the perfection. Finally, we hope this Final Project report can be useful for anyone who need it.

Wassalamu'alaikum Wr. Wb

Surakarta, July 2015

The author

MOTTO

“Verify, with the hardship, there is relief. So when you have finished (from your occupation), then stand up for Allah's worship. And to your Lord (Alone) turn (all your intentions and hopes and) your invocations”.

(QS. Alam Nasyar (94): 6-8)

“Our job is not to succeed, our job is just to try, because in trying we discover and learn to build a chance to succeed.”

(Mario Teguh)

“The destiny of every human being is predetermined since they were born, but with hard work we can beat destiny”

(Uzumaki Naruto)

Do what you want to do

(Anonim)

Nothing Is Impossible Beyond Determination

(Anonim)

DEDICATION

This creation dedicated for:

1. **Allah SWT**, for His abundance of grace.
2. **My father and my mother**, millions of endearments, sorry and thanks will not be able repay your sacrifice to me. I love you so much. Thanks God, protect them both.
3. **My sisters**, which always gives motivation and prayers.
4. **All of my big family**, which can be a motivation, both moral and material that can assist in the learning process.
5. **My friend on KMTE Robot Research, AERO T-RTF Universitas Muhammadiyah Surakarta.**
6. **My class mate EE of 2011**, who have shared in the joy and sorrow.
7. **My friend on PESMA UMS**
8. **Older brother or sister on electrical engineering**, who have shared the experience during college.

CONTRIBUTIONS LIST

Assalamu'alaikum Wr.Wb.

In completion of the final project entitled **“DESIGN AND IMPLEMENTATION ON PROTOTYPE OF WEB BASED HOME MONITORING AND LAMPS CONTROLLING BASED ON ARDUINO SYSTEM”**, I declare that:

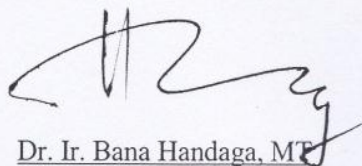
1. The design of the circuit lines on the PCB using Diptrace v2.3.1.
2. Simulation and circuit figure using Proteus v7.10 SP3.
3. The program of smart home for monitoring and controlling lamps switches based on arduino system, I made myself on guidance many references from the Internet.
4. Preparation of the final project report do by myself at home and campus.

I created this contribution list honestly. I am responsible for the content and validity.

Wassalamu'alaikum Wr.Wb.

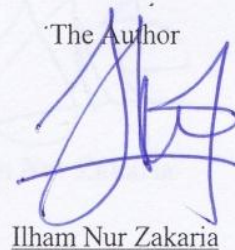
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DECLARATION OF AUTHORSHIP

Assalamu'alaikum warahmatullahi wabarakaatuh

That marked the hand in the following :

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BASED ON ARDUINO SYSTEM**

Stated that the thesis that I submit this is really a work of his own. except citations and summaries that I mentioned sources in the discussion, if in future there is untruth in this statement then I am prepared to take responsibility.

Wassalamu'alaikum warahmatullahi wabarakaatuh

Surakarta, July 2015



Ilham Nur Zakaria

TABLE OF CONTENTS

TITLE PAGE	i
APPROVAL PAGE	ii
AFFIRMATION PAGE	iii
PREFACE	iv
MOTTO	vi
DEDICATION PAGE	vii
LIST OF CONTRIBUTION	viii
DECLARATION OF AUTHORSHIP	ix
TABLE OF CONTENT	x
TABLE OF FIGURE	xiii
LIST OF TABLES	xv
ABSTRACTS.....	xvi
CHAPTER I PRELIMINARY	1
1.1. Background	1
1.2. Problem	2
1.3. Objectives	2
1.4. Limitations	2
1.5. Benefits.....	3
1.6. Writing methods.....	3
CHAPTER II THE LITERATURE	5
2.1. Review.....	5
2.2. Reference.....	6
2.2.1. Arduino Uno.....	6

2.2.2. Ethernet Shield	7
2.2.3. PIR sensors	9
2.2.4. LM35 sensor.....	11
2.2.5. Relay.....	14
2.3. Programming Language	15
2.3.1. Processing Program.....	15
2.3.2. HTML	15
2.3.3. CSS.....	16
2.3.4. Java Script	18
CHAPTER III RESEARCH METHOD	20
3.1. Time and Place	20
3.2. Tools and Materials	20
3.2.1 Tools.....	21
3.2.2 Materials.....	21
3.3 Flowchart of The Research	22
3.4 The Design of System	23
3.4.1 Hardware Design	24
3.4.2 Software Design	28
3.4.3 Web page Design	37
3.4.4 Prototype Design	37
CHAPTER IV THE RESULT AND ANALYSIS	39
4.1. Result and analysis of web page	39
4.2. Result and analysis of prototype	40
4.3. Result and analysis of Devices.....	42

4.4. Testing of Ethernet Shield	43
4.5. Testing of Relay	45
4.6. Testing of controlling switch lamps	45
4.7. Testing of room monitoring	47
4.8. Testing of the overall system	49
CHAPTER V CLOSING	54
5.1. Conclusions	54
5.2. Suggestions.....	54
BIBLIOGRAFY	
ATTACHMENT	

LIST OF FIGURE

Figure 2.1.Arduino	6
Figure 2.2.Ethernet Shield	8
Figure 2.3. PIR sensor	9
Figure 2.4.Diagram of internal circuit PIR Sensor	10
Figure 2.5. Reach directions Wave sensor PIR.....	10
Figure 2.6.Configuration pin of PIR sensor	11
Figure 2.7. Configuration circuit of LM35	11
Figure 2.8. LM35 sensor	13
Figure 2.9.Relationships graph of temperature accuracy for sensor LM35	13
Figure 2.10. Relay	14
Figure 3.1.The Flowchart Research	22
Figure 3.2. Block Diagram System.....	23
Figure 3.3.Arduino UNO R3 Schematic	25
Figure 3.4.Arduino and Ethernet Shield	26
Figure 3.5.The temperature sensor schematic.....	27
Figure 3.6.PIR sensors schematic	27
Figure 3.7.Manual switch schematic.....	28
Figure 3.8.Flowchart ofarduino program	29
Figure 3.9.Configuration local network.....	31
Figure 3.10.Flowchart of controlling switch lamps	32
Figure 3.11.Flowchart of PIR sensor	33
Figure 3.12.Flowchart of LM35 sensor	34

Figure 3.13.Flow chart of Web Page	35
Figure 3.14.shows the calling function of javascript to arduino	36
Figure 3.15.The design of web page	37
Figure 3.16.The design of 3D prototype	37
Figure 3.17. The design of prototype sketch.....	38
Figure 4.1.The web page display	39
Figure 4.2.The front display of prototype	41
Figure 4.3.The rear display of prototype.....	42
Figure 4.4.Schematic of devices	42
Figure 4.5.The result diagnostic PING (success).....	43
Figure 4.6.the result diagnostic PING (failed)	44
Figure 4.7.Testing result the overall system on Laptop display	49
Figure 4.8.Testing result the overall system on smartphone display	49
Figure 4.9.Testing result the overall system when LAN connection is disconnected	51
Figure 4.8.Monitoring test when temperature and PIR sensor is disconnected	52

LIST OF TABLES

Table 3.1. Tools and function	21
Table 3.2. Materials and function	21
Table 3.3. Data of comparison formula	27
Table 4.1. The testing result of relay.....	45
Table 4.2. Result using Localhost	45
Table 4.3. Result using WLAN.....	46
Table 4.4. Result using manual switch	46
Table 4.5. The testing result of temperature sensor	47
Table 4.6. The testing result of PIR sensors.....	48
Table 4.7. Web Browser Testing.....	53

ABSTRACTS

Smart Home is a technology that makes the house be smart and automatic. Typically, these technologies have automated systems for lighting, control, security and many other functions. Smart Home System is designed and made by utilizing WLAN network based on the Arduino microcontroller. Ethernet shield is able to connect Arduino to the network via TCP / IP communication. This system is capable of home monitoring and lamps controlling. There are three sensors used to monitor home includes two PIR and a LM35 temperature sensor. PIR sensors are used to detect of motion. A LM35 temperature sensor is used to monitor temperature in room. The home monitoring and lamps controlling are displayed on a web page by laptop and smartphone.

Key words :Arduino Uno, WLAN, Ethernet Shield, PIR sensors, LM35
temperature sensor